SUPPLEMENTARY DATA

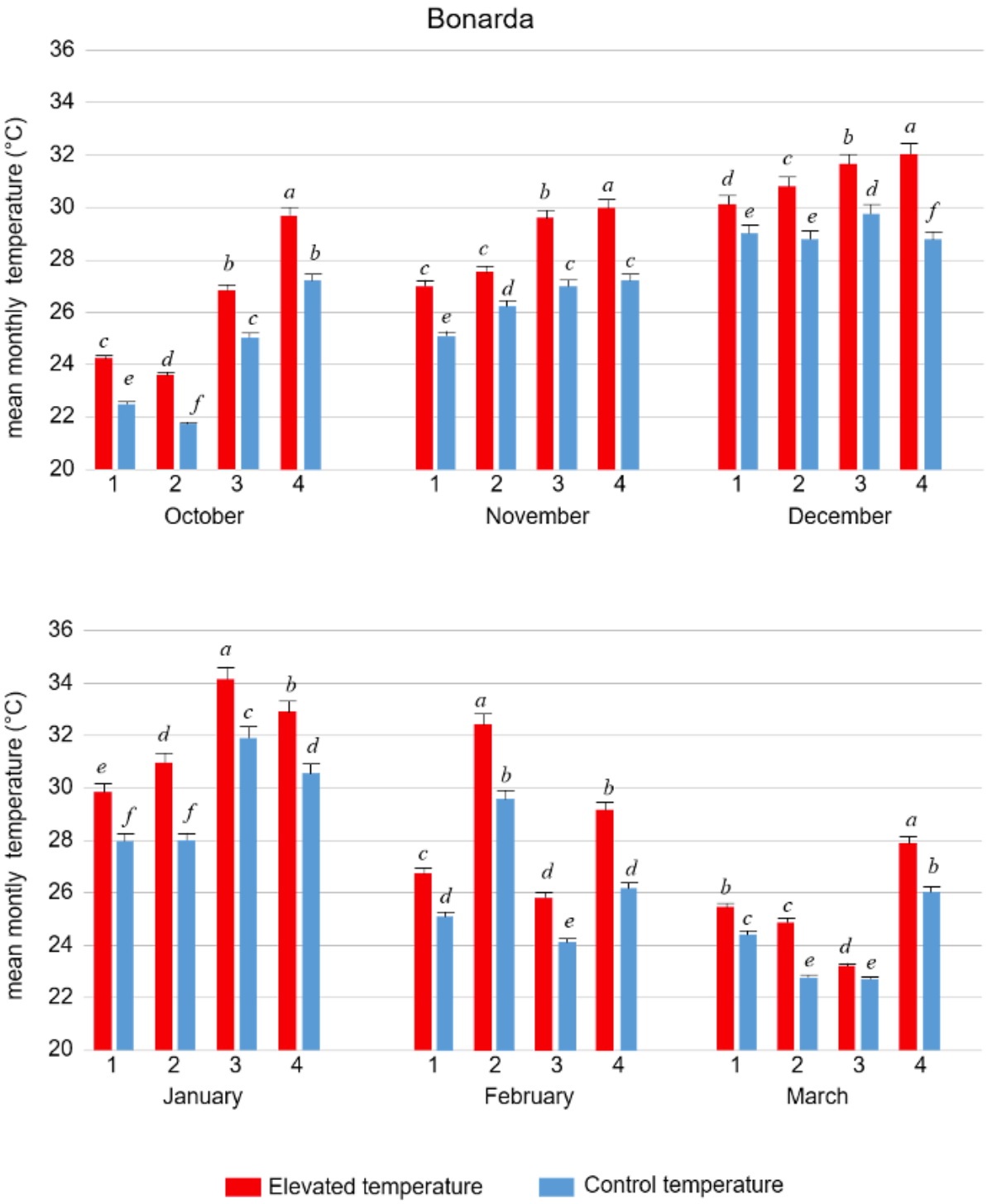


Figure S1A. Mean monthly temperature from October to March across four growing seasons for each temperature treatment in Bonarda vines.

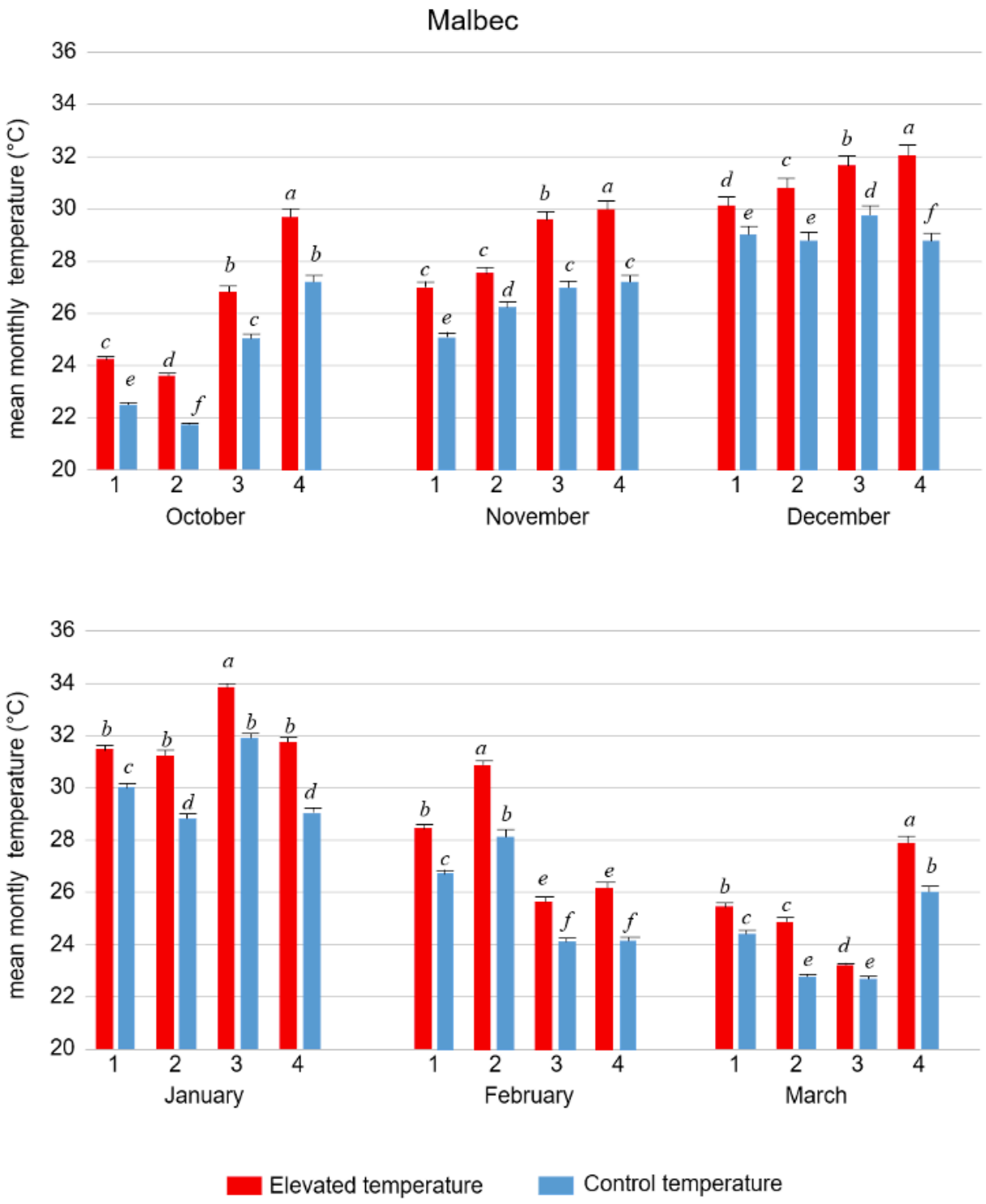


Figure S1B. Mean monthly temperature from October to March across four growing seasons for each temperature treatment in Malbec vines.

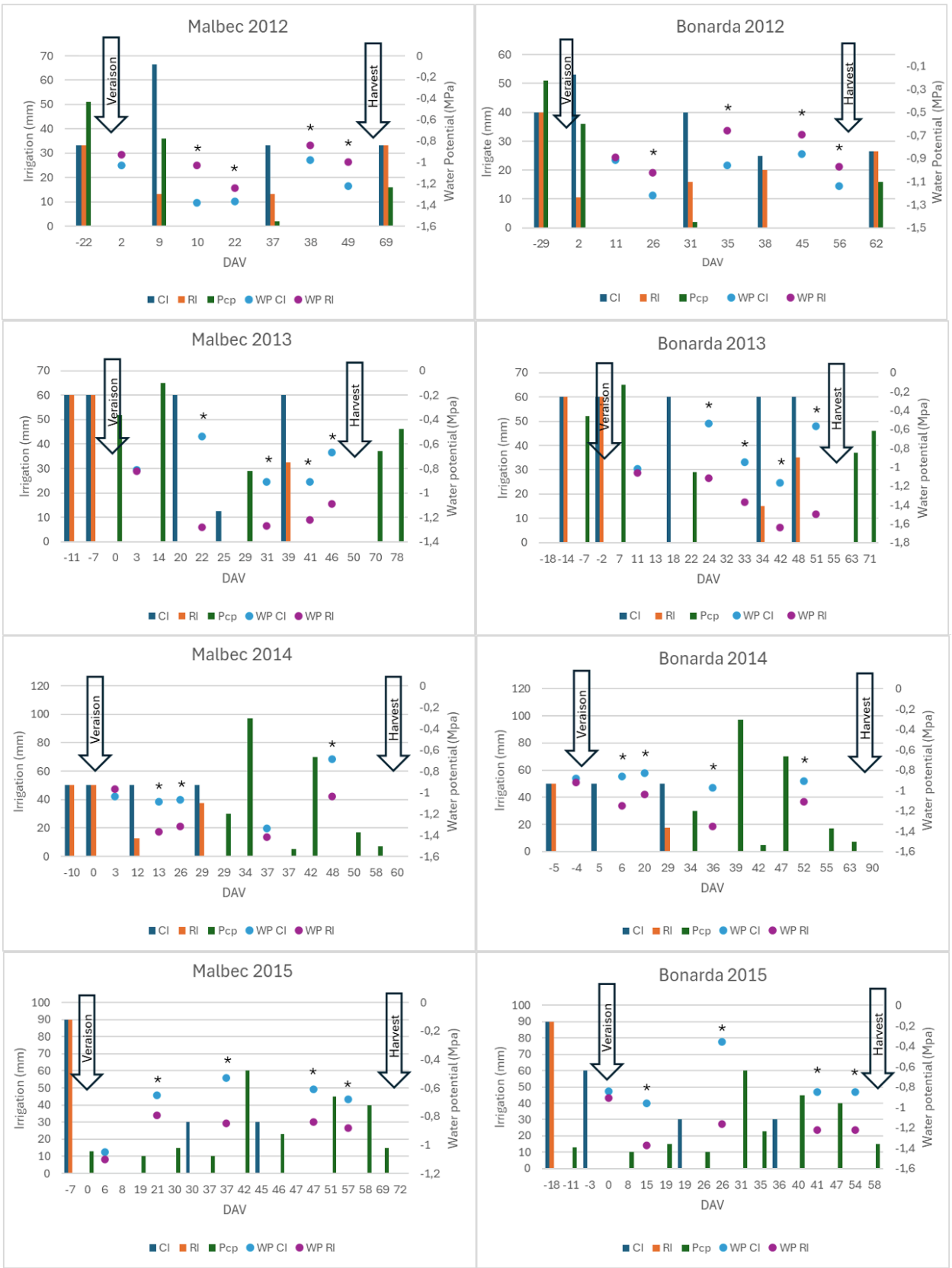


Figure S2. Water status in Malbec and Bonarda plants during all four seasons, starting around veraison. Orange (RI) and blue (CI) bars represent water applied by irrigation in each treatment, and the green bars represent precipitation (mm). Midday leaf water potential values are represented by violet (RI) and light blue (CI) dots. Asterisks indicate significant differences for midday water potential values, based on the DGC test at a significance level of $\alpha < 0.05$.

Table S1. Average temperature values for the elevated temperature treatment (ET) and control temperature treatment (CT) in Bonarda and Malbec vineyards.

Season	Daytime mean temperature (°C)			Night-time mean temperature (°C)		
	ET	CT	p-value	ET	CT	p-value
1	28	29.6	<0.0001	17.2	17.1	0.6988
2	25.5	27.9	<0.0001	15.9	16.7	<0.001
3	26.6	28.7	<0.0001	16.4	16.6	0.8693
4	25.8	28.4	<0.0001	16.7	16.3	<0.001

Table S2. Chlorophyll relative content values for Bonarda cv. under temperature and irrigation treatments.

Chlorophyll relative content (SPAD units)				
season	treatment	p-value	mean values ± e.e. of significant treatments	
2	T	0.5669	I/DAB	
	I	0.0019	CI/110 DAB = 49.08 ± 1.24	*a*
	DAB	0.9999	CI/20 DAB = 45.39 ± 1.49	*b*
	T/I	0.7248	RI/20 DAB = 44.84 ± 1.49	*b*
	T/DAB	0.8091	RI/110 DAB = 41.15 ± 1.24	*c*
	I/DAB	0.0065		
3	T	0.0013	T/I	
	I	<0.0001	ET/CI = 47.00 ± 0.61	*a*
	DAB	<0.0001	CT/CI = 43.93 ± 0.61	*b*
	T/I	0.0024	ET/RI = 41.83 ± 0.61	*c*
	T/DAB	0.0157	CT/RI = 41.73 ± 0.61	*c*
	I/DAB	0.4168		
			T/DAB	
			ET/110 DAB = 49.74 ± 0.78	*a*
			CT/90 DAB = 48.28 ± 0.78	*b*
			ET/90 DAB = 47.49 ± 0.78	*b*
			CT/110 DAB = 47.16 ± 0.78	*b*
			ET/30 DAB = 43.45 ± 0.78	*c*
			CT/30 DAB = 42.28 ± 0.78	*c*
4	T	0.099	DAB	
	I	0.0916	90 DAB = 45.93 ± 0.66	*a*
	DAB	0.0009	30 DAB = 43.73 ± 0.66	*b*
	T/I	0.0061		
	T/DAB	0.5339	T/I	
	I/DAB	0.605	CT/RI = 46.92 ± 0.76	*a*
			ET/ CI = 46.54 ± 0.76	*a*
			ET/RI = 44.81 ± 0.76	*a*
			CT/CI = 46.48 ± 0.76	*b*

T = temperature treatment; I = irrigation treatment; DAB = days after bud break; ET = elevated temperature; CT = control temperature; RI = restricted irrigation; CI = control irrigation. Different letters indicate significant differences based on the DGC test at a significance level of $\alpha < 0.05$. Values in gray represent *p*-values > 0.05.

Table S3. Net photosynthesis values for Bonarda cv. under temperature and irrigation treatments.

Net photosynthesis (mmol CO_2 $m^{-2}s^{-1}$)				
season	treatment	p-value	mean values ± e.e. of significant treatments	
1	T	0.0003	T/DAB	
	I	0.305	ET/80 DAB = 13.17 ± 0.66	*a*
	DAB	0.0001	CT/80 DAB = 8.79 ± 0.77	*a*
	T/I	0.0555	ET/110 DAB = 5.96 ± 0.47	*b*
	T/DAB	0.001	CT/110 DAB = 5.71 ± 0.47	*c*
	I/DAB	0.0208		
			I/DAB	
			RI/80 DAB = 12.01 ± 0.62	*a*
			CI/80 DAB = 9.95 ± 0.81	*b*
			CI/110 DAB = 6.24 ± 0.47	*c*
			RI/110 DAB = 5.43 ± 0.47	*c*
2	T	0.1368	I	
	I	0.0085	RI = 11.045 ± 0.51	*a*
	DAB		CI = 9.127 ± 0.5	*b*
	T/I	0.4564		
	T/DAB		measured at 80 DAB	
	I/DAB			
3	T	0.01	T	
	I	0.0337	ET = 10.61 ± 0.63	*a*
	DAB	0.0834	CT = 8.1 ± 0.63	*b*
	T/I	0.37		
	T/DAB	0.5868	I	
	I/DAB	0.5407	RI = 7.38 ± 0.44	*a*
			CI = 6.36 ± 0.44	*b*

T = temperature treatment; I = irrigation treatment; DAB = days after bud break; ET = elevated temperature; CT = control temperature; RI = restricted irrigation; CI = control irrigation. Different letters indicate significant differences based on the DGC test at a significance level of $\alpha < 0.05$. Values in gray represent *p*-values > 0.05. *Mean differences are shown only for black *p*-values. Means of significant treatments are not shown individually if they are part of a significant interaction.

Table S4. Stomatal conductance values for Bonarda cv. under temperature and irrigation treatments.

stomatal conductance (mmol H_2O $m^{-2}s^{-1}$)				
season	treatment	p-value	mean values ± e.e. of significant treatments	
1	T	0.0317	T	
	I	0.9451	ET = 243.3 ± 9.58	*a*
	DAB	<0.0001	CT = 213.73 ± 9.58	*b*
	T/I	0.4917		
	T/DAB	0.7659	DAB	
	I/DAB	0.0998	100 DAB = 292.48 ± 9.58	*a*
			70 DAB = 164.56 ± 9.58	*b*
2	T	0.0773	I/DAB	
	I	<0.0001	CI/100 DAB = 154.18 ± 9.34	*a*
	DAB	0.2539	CI/40 DAB =122.95 ± 13.21	*a*
	T/I	0.1623	RI/40 DAB =117.96 ± 13.21	*a*
	T/DAB	0.5733	RI/100 DAB = 60.46 ± 9.34	*b*
	I/DAB	0.0002		
3	T	0.039	T	
	I	0.9957	ET = 164.78 ± 6.53	*a*
	DAB	0.0045	CT = 145.41 ± 6.53	*b*
	T/I	0.0526		
	T/DAB	0.843	DAB	
	I/DAB	0.6675	40 DAB = 172.52 ± 7.23	*a*
			70 DAB = 151.91 ± 10.32	*b*
			100 DAB = 140.85 ± 5.91	*b*
4	T	0.2874	I/DAB	
	I	0.0011	CR/10 DAB =159.52 ± 7.36	*a*
	DAB	<0.0001	IR/10 DAB =155.44 ± 7.36	*a*
	T/I	0.0808	CR/100 DAB =127.14 ± 6.01	*b*
	T/DAB	0.0909	CR/70 DAB =75.89 ± 6.01	*c*
	I/DAB	<0.0001	IR/40 DAB =75.65 ± 8.05	*c*
			IR/100 DAB =7307 ± 6.01	*c*
			CR/40 DAB =69.7 ± 8.5	*c*
			IR/70 DAB =62.37 ± 6.01	*c*

T = temperature treatment; I = irrigation treatment; DAB = days after bud break; ET = elevated temperature; CT = control temperature; RI = restricted irrigation; CI = control irrigation. Different letters indicate significant differences based on the DGC test at a significance level of $\alpha < 0.05$. Values in gray represent *p*-values > 0.05. *Mean differences are shown only for black *p*-values. Means of significant treatments are not shown individually if they are part of a significant interaction.

Table S5. Chlorophyll relative content for Malbec cv. under temperature and irrigation treatments.

Chlorophyll relative content (SPAD units)				
season	treatment	p-value	mean values ± e.e. of significant treatments	
2	T	0.4282	T/I	
	I	0.0144	CT/CI = 49.14 ± 1.17	*a*
	DAB	<0.0001	ET/CI = 47.83 ±1.17	*a*
	T/I	0.0234	ET/RI = 47.67 ± 1.17	*a*
	T/DAB	0.5601	CT/RI = 44.98 ± 1.17	*b*
	I/DAB	0.0004		
			I/DAB	
			RI/80 DAB = 50.90 ± 1.21	*a*
			CI/80 DAB = 49.86 ± 1.21	*a*
			CI/110 DAB = 47.11 ± 1.12	*b*
			RI/110 DAB = 41.75 ± 1.12	*c*
3	T	0.2097	DAB	
	I	0.076	90 DAB = 44.51 ± 0.48	*a*
	DAB	<0.0001	120 DAB = 42.96 ± 0.54	*b*
	T/I	0.6464	30 DAB = 42.51 ± 0.54	b
	T/DAB	0.0718	0 DAB = 36.19 ± 0.64	c
	I/DAB	0.8884		
4			I	
	T	0.1316	CI = 42.08 ± 0.52	*a*
	I	0.0007	RI = 39.52 ± 0.87	*b*
	DAB	<0.0001		
	T/I	0.7653	DAB	
	T/DAB	0.6607	90 DAB = 44.59 ± 0.64	*a*
	I/DAB	0.7082	60 DAB = 41.57 ± 0.64	*b*
			30 DAB = 36.24 ± 0.64	*c*

T = temperature treatment; I = irrigation treatment; DAB = days after bud break; ET = elevated temperature; CT = control temperature; RI = restricted irrigation; CI = control irrigation. Different letters indicate significant differences based on the DGC test at a significance level of $\alpha < 0.05$. Values in gray represent *p*-values > 0.05.

Table S6. Net photosynthesis values for Malbec cv. under temperature and irrigation treatments.

Net photosynthesis (mmol CO_2 $m^{-2}s^{-1}$)				
season	treatment	p-value	mean values ± e.e. of significant treatments	
1	T	0.1294	DAB	
	I	0.8175	80 DAB = 11.65 ± 0.4	*a*
	DAB	<0.0001	110 DAB = 7.79 ± 0.27	*b*
	T/I	0.4105		
	T/DAB	0.5001		
	I/DAB	0.794		
2	T	0.0009	I	
	I	0.7933	ET = 9.20 ± 0.33 A	*a*
	DAB	0.004	CT = 7.61 ± 0.31 B	*b*
	T/I	0.9436		
	T/DAB	0.0799	I/DAB	
	I/DAB	0.0208	CI/30 DAB = 7.73 ± 0.46	*a*
			RI/30 DAB = 8.77 ± 0.45	*a*
			RI/10 DAB = 8.16 ± 0.45	*a*
			CI/10 DAB = 6.96 ± 0.46	*b*
3	T	0.9563	I/DAB	
	I	<0.0001	CI/80 DAB = 9.4 ± 0.62	*a*
	DAB	0.1091	CI/100 DAB = 7.51 ± 0.62	*b*
	T/I	0.7234	RI/100 DAB = 7.72 ± 0.62	*c*
	T/DAB	0.9483	RI/80 DAB = 3.33 ± 0.62	*c*
	I/DAB	<0.0001		

T = temperature treatment; I = irrigation treatment; DAB = days after bud break; ET = elevated temperature; CT = control temperature; RI = restricted irrigation; CI = control irrigation. Different letters indicate significant differences based on the DGC test at a significance level of $\alpha < 0.05$. Values in gray represent *p*-values > 0.05. *Mean differences are shown only for black *p*-values. Means of significant treatments are not shown individually if they are part of a significant interaction.

Table S7. Stomatal conductance values for Malbec cv. under temperature and irrigation treatments.

stomatal conductance (mmol H_2O $m^{-2}s^{-1}$)				
season	treatment	p-value	mean values ± e.e. of significant treatments	
1	T	0.8048	I/DAB	
	I	0.0126	CI/100 DAB = 299.35 ± 12.11	*a*
	DAB	<0.0001	CI/40 DAB = 236.68 ± 17.12	*b*
	T/I	0.0537	RI/40 DAB = 231.24 ± 7.12	*b*
	T/DAB	0.1464	RI/100 DAB = 215.36 ± 12.11	*b*
	I/DAB	0.0012	RI/70 DAB = 199.69 ± 12.11	*b*
			CI/70 DAB = 197.36 ± 17.12	*b*
2	T	0.0032	T	
	I	<0.0001	ET = 93.5 ± 3.97	*a*
	DAB	<0.0001	CT = 76.67 ± 3.97	*b*
	T/I	0.4265		
	T/DAB	0.6898	I	
	I/DAB	0.804	CI =107.48 ± 3.97	*a*
			RI = 62.69 ± 3.97	*b*
			DAB	
			100 DAB = 119.46 ± 4.86	*a*
			70 DAB = 77.81 ± 4.86	*b*
			120 DAB = 57.99 ± 4.86	*c*
3	T	0.43866	DAB	
	I	0.6711	40 DAB = 172.52 ± 7.23	*a*
	DAB	<0.0001	70 DAB = 151.91 ± 10.32	*b*
	T/I	0.9501	100 DAB = 140.85 ± 5.91	*b*
	T/DAB	0.5924		
	I/DAB	0.9803		
4	T	0.0028	T	
	I	0.877	ET = 115.67 ± 3.7	*a*
	DAB	<0.0001	CT = 99.98 ± 3.7	*b*
	T/I	0.747		
	T/DAB	0.125	I/DAB	
	I/DAB	0.004	IR/10 DAB = 148.34 ± 6.21	*a*
			CR/70 DAB = 145.25 ± 5.07	*a*
			CR/10 DAB = 140.68 ± 6.21	*a*
			CR/100 DAB = 119.8 ± 7.17	*b*
			IR/100 DAB = 118.97 ± 7.17	*b*
			IR/70 DAB = 118.97 ± 5.07	*b*
			IR/40 DAB = 43.91 ± 10.15	*c*
			CR/40 DAB = 27.18 ± 10.15	*c*

T = temperature treatment; I = irrigation treatment; DAB = days after bud break; ET = elevated temperature; CT = control temperature; RI = restricted irrigation; CI = control irrigation. Different letters indicate significant differences based on the DGC test at a significance level of $\alpha < 0.05$. Values in gray represent *p*-values > 0.05. *Mean differences are shown only for black *p*-values. Means of significant treatments are not shown individually if they are part of a significant interaction.